



west virginia department of environmental protection

Office of Oil and Gas
601 57th Street SE
Charleston, WV 25304
(304) 926-0450
(304) 926-0452 fax

Earl Ray Tomblin, Governor
Randy C. Huffman, Cabinet Secretary
www.dep.wv.gov

August 30, 2013

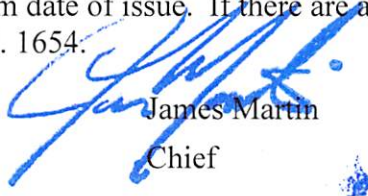
WELL WORK PLUGGING PERMIT

Plugging

This permit, API Well Number: 47-3905303, issued to EQT PRODUCTION COMPANY, is evidence of permission granted to perform the specified well work at the location described on the attached pages and located on the attached plat, subject to the provisions of Chapter 22 of the West Virginia Code of 1931, as amended, and all rules and regulations promulgated thereunder, and to all conditions and provisions outlined in the pages attached hereto. Notification shall be given by the operator to the Oil and Gas Inspector at least 24 hours prior to the construction of roads, locations, and/or pits for any permitted work. In addition, the well operator shall notify the same inspector 24 hours before any actual well work is commenced and prior to running and cementing casing. Spills or emergency discharges must be promptly reported by the operator to 1-800-642-3074 and to the Oil and Gas inspector.

Upon completion of the plugging well work, the above named operator will reclaim the site according to the provisions of WV Code 22-6-30. The above named operator will also file, as required in WV Code 22-6-23, an affidavit on form WR-38 by two experienced persons in the operator's employment and the Oil and Gas inspector that the work authorized under this permit was performed and a description given. Failure to abide by all statutory and regulatory provisions governing all duties and operations here under may result in suspensions or revocation of this permit and in addition may result in civil and/or criminal penalties being imposed upon the operator.

This permit will expire in two (2) years from date of issue. If there are any questions, please free to contact me at (304) 926-0499 ext. 1654.



James Martin
Chief

Operator's Well No: (COURTLAND 18) WV 215391

Farm Name: THE COURTLAND CO

API Well Number: 47-3905303

Permit Type: Plugging

Date Issued: 08/30/2013

Promoting a healthy environment.

Date: August 15, 2013
Operator's Well
Well No. 215391 (Courtland #18)
API Well No.: 47 039 - 05303

STATE OF WEST VIRGINIA
DIVISION OF ENVIRONMENTAL PROTECTION
OFFICE OF OIL AND GAS

APPLICATION FOR A PERMIT TO PLUG AND ABANDON

- 4) Well Type: Oil Gas X Liquid Injection Waste Disposal:
If Gas, Production X Or Underground storage Deep Shallow X
- 5) Elevation: 1101' Watershed: Davis Creek of the Great Kanawha River
Location: Loudon County: Kanawha Quadrangle: Charleston West 7.5'
District:
- 6) EQT Production Company
Well Operator 120 Professional Place
Address: Bridgeport, WV 26330
- 7) Designated Agent: Rex C. Ray
Address: 120 Professional Place
Bridgeport, WV 26330
- 8) Oil & Gas Terry Urban
Name: P.O. Box 1207
Address: Clendenin, WV 25045
- 9) Plugging Contractor:
Name: HydroCarbon Well Service
Address: PO BOX 995
Buckhannon, WV 26201

- 10) Work Order: The work order for the manner of plugging this well is as follows:

See Attachment for details and procedures.

OFFICE USE ONLY

Notification must be given to the district oil and gas inspector 24 hours before permitted work can commence.

Work order approved by inspector 

Date 8/19/13

Received

AUG 20 2013

Office of Oil and Gas
WV Dept. of Environmental Protection

PLUGGING PROGNOSIS

Courtland Land Co. #18 (215391)

Kanawha County, West Virginia

API # 47-039-05303

District: Loudon

BY: Craig Duckworth

DATE: 2/21/13

CURRENT STATUS:

9 5/8" csg @ 645' cts
 4 1/2" csg @ 1977'
 2 3/8" tbg @ 1841'

TD @ 2041'

Elevation @ 1101'

Fresh Water @ 490'

Salt Water @ 875' & 1200'

Salt Sand @ 784' - 1495'

Coal @ 6', 148', 450', 600'

Gas shows @ none reported

Oil Shows @ none reported

Stimulation: @ Big Injun (Perfs. @ 1830'-1840'); Big Lime (Perfs. @ 1759'-1786')

1. Notify State Inspector, Terry Urban 304-549-5915, and 24 hrs prior to commencing operations.
2. TOOH w/ 2" tbg and check condition.
3. TIH w/ tbg @ 1841'; Set 182' C1A Cement Plug @ 1841' to 1659' (Big Lime & Injun)
4. TOOH w/ tbg @ 1659'; Gel hole @ 1659' to 1150'
5. TOOH w/ tbg and attempt to pull 4 1/2"; Freepoint 4 1/2", cut/shoot 4 1/2" at freepoint. Set 100' C1A Cement Plug @ 1150' to 1050' (4 1/2" csg cut & Elevation)
6. Set a 100' C1A Cement Plug 50' In/Out of cut. Perf all FW, Coal, Oil and Gas shows below 4 1/2" cut Do not omit any plugs
7. TIH w/ tbg @ 1050'; Gel hole @ 1050' to 784'
8. TOOH w/ tbg @ 784'; Set 384' C1A Cement Plug @ 784' to 400' (Salt Sand @ 490', 9 5/8", coal @ 600', coal @ 450', FW @ 490')
9. Set a 100' C1A Cement Plug 50' In/Out of cut. Perf all FW, Coal, Oil and Gas shows below 9 5/8" cut Do not omit any plugs
10. TOOH w/ tbg @ 400'; Gel hole @ 400' to 200'
11. TOOH w/ tbg @ 200'; Set 200' C1A Cement Plug @ 200' to 0' (coal @ 148' & 6' & surface)
12. Top off as needed
13. Set Monument to WV-DEP Specifications
14. Reclaim Location & Road to WV-DEP Specifications

If you pull 9 5/8" &

Aug 20 2013
8-19-13

Received

AUG 20 2013

Office of Oil and Gas
 WV Dept. of Environmental Protection

3905303 P

WR-35

27-Sep-99
API # 47- 039-05303

State of West Virginia
Division of Environmental Protection
Section of Oil and Gas

Reviewed: K

Well Operator's Report of Well Work

Farm Name: The Courtland Co.

Operator Well No.: courtland 18

LOCATION: Elevation: 1,101.00

Quadrangle: Charleston West

District: Loudon

County: Kanawha

Latitude: 2900 Feet South of 38 Deg.
Longitude: 10470 Feet West of 81 Deg.

Minutes Seconds
17 30
37 30

Office of Oil & Gas
Permitting

JAN 11 2000

WV Division of
Environmental Protection

Company: Eastern States Oil & Gas
P.O. Box 2347, 1710 Pennsylvania Avenue
Charleston, WV 25328

Agent: Robert Alley

Inspector: Carlos Hively
Permit Issued: 9/27/99

Well work commenced: 11/16/99
Well work completed: 12/13/99

Verbal Plugging

Permission granted on:

Rotary Rig X Cable Rig

Total Depth 2041 feet

Fresh water depths (ft) 490'

Salt water depths (ft) 875', 1200'

Is coal being mined in area?

Coal Depths (ft): 6', 148', 450', 600'

Casing & Tubing Size	Used In Drilling	Left In Well	Cement Fill Up Cu. Ft.
13 3/8"	27'	27'	Grouted
9 5/8"	645'	645'	206.5 ft ³
4 1/2"	1977'	1977'	151.2 ft ³
2 3/8"		1841'	

OPEN FLOW DATA

Producing formation Big Injun, Big Lime

Gas: Initial open flow odor MCF/d Oil: Initial open flow Bbl/d
Final open flow: 459 MCF/d Final open flow:
Time of open flow between initial and final tests Hours
Static rock pressure 260 psig (surface pressure) after Hours

See Attach
for details

Second producing formation Pay Zone Depth (ft):
Gas: Initial open flow MCF/d Oil: Initial open flow Bbl/d
Final open flow: MCF/d Final open flow:
Time of open flow between initial and final tests Hours
Static rock pressure psig (surface pressure) after Hours

NOTE: ON BACK OF THIS FORM PUT THE FOLLOWING: 1) DETAILS OF PERFORATED INTERVALS, FRACTURING OR STIMULATING, PHYSICAL CHANGE, ETC. 2) THE WELL LOG WHICH IS A SYSTEMATIC DETAILED GEOLOGICAL RECORD OF ALL FORMATIONS, INCLUDING COAL ENCOUNTERED BY THE WELLBORE.

For: BLAZER ENERGY CORPORATION

By: Robert Alley
Date: 1/10/00

Received

AUG 19 13

Office of Oil and Gas
Environmental Protection

Charleston West 9

3905303P

EASTERN STATES OIL & GAS, INC.
WR-35 COMPLETION REPORT - Attachment
Well Treatment Summary

Well: Courtland 18API# 47-039-05303

Date	12/07/99	12/07/99			
Type Frac	75 Q	Acid w/N ²			
Acid, N ₂ , Foam, Water	Foam	Displacement			
Zone Treated	Big Injun	Big Lime			
# Perfs	21	22			
From - To:	1830' - 1840'	1759' - 1786'			
BD Pressure @ psi	2326	3348			
ATP psi	2150	2188			
Avg. Rate, B=B/M, S=SCF/M	20 B (foam) 8.8 B	12000 S			
Max. Treat Press psi	2336	3348			
ISIP psi	1342	1466			
Frac Gradient	1.18	1.29			
10 min S-I Pressure	1255	1611			
Material Volume					
Sand-sks	459				
Water-bbl	155				
SCF N ₂	320,000	77,000			
Acid-gal	350 gal 15.4%	2000 gal 15.4%			
NOTES:					

TOP	BOTTOM	FORMATION	REMARKS
0	0	Platform - GL	
6	7	Coal	
7	14	Sand	
14	22	Shale	
22	148	Sand	
148	150	Coal	
150	165	Shale	
165	240	Sand	
240	295	Shale	
295	355	Sand	
355	450	Shale	
450	453	Coal	
453	600	Shale	Water @ 490'
600	603	Coal	
603	615	Shale	
615	635	Sand	
635	785	Shale	
784	1495	Salt Sand	Water @ 875', 1200'.
1578	1646	Little Lime	GT @ 1506', 1631 = NS
1646	1650	Pencil Cave	
1650	1812	Big Lime	GT @ 1661', 1724', 1756 = NS
1814	1844	Big Injun	
	2040	TD	GT @ 2040' = odor

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Office of Oil and Gas
WV Dept. of Environmental Protection

LONG. 81°39'41.4"

LATITUDE 38°17'30"

10.470'

2.900'

81°37'30"

WELL NO. 18

THE COURTLAND COMPANY LOT #52

CONCRETE MONUMENT (FOUND)

THE COURTLAND COMPANY LOT #44 45 AC±

THE COURTLAND COMPANY LOT #43 72.60 AC±

THE COURTLAND COMPANY LOT #42 121 AC±

THE COURTLAND COMPANY LOT #43 59.80 AC±

THE COURTLAND COMPANY LOT #53

WELL NO. 18 STATE PLANE COORDINATES
(N) 458,082
(E) 1,810,126

NOTES ON SURVEY
1. TIES TO WELLS AND CORNERS ARE BASED ON STATE PLANE GRID NORTH WV SOUTH ZONE NAD '27.
2. TIES TO REFERENCES ARE BASED ON MAGNETIC NORTH 7/09/99.
3. LEASE BOUNDARY FOLLOWS THE RIDGE ADJACENT TO THE KANAWHA STATE FOREST.
4. SURFACE OWNER AND ADJOINER INFORMATION TAKEN FROM THE ASSESSOR AND COUNTY CLERK RECORDS OF KANAWHA COUNTY IN JULY, 1999.
SURFACE BOUNDARIES AS SHOWN HEREON ARE TAKEN FROM A MAP SHOWING LAND HOLDINGS OF THE COURTLAND COMPANY DATED 2/01/77 AS PREPARED BY FIELD ENGINEERING CO..
5. WELL LAT./LONG. ESTABLISHED BY DGPS (SUBMETER MAPPING GRADE).

1835-P

WELL NO. 18

2400'

2054

36" X 10" (DIAMETER) PETRIFIED WOOD WITH NOTCH (FOUND)

STATE OF WEST VIRGINIA KANAWHA STATE FOREST

REFERENCES
1" = 100'

WELL NO. 18
S 00°30' E 102.00' (104.3' SLOPE)
S 23°00' E 100.5' SLOPE
14" BLACK GUM
10" BLACK OAK
RIDGE
SURFACE AND LEASE BOUNDARY CENTER OF

1 THE UNDERSIGNED, HEREBY CERTIFY THAT THIS PLAT IS CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF AND SHOWS ALL THE INFORMATION REQUIRED BY LAW AND THE REGULATIONS ISSUED AND PRESCRIBED BY THE DEPARTMENT OF ENERGY.

P.S. 677

Gregory A. Smith

677

Gregory A. Smith

PROFESSIONAL SURVEYOR

WEST VIRGINIA

STATE OF

No. 677

LICENSED

GREGORY A. SMITH

MINIMUM DEGREE OF ACCURACY 1 / 2500

FILE NO. 423BP17 (78-65)

SCALE 1" = 500'

PROVEN SOURCE OF ELEVATION JUNCTION OF ROADS ELEVATION 676'

STATE OF WEST VIRGINIA
DIVISION OF ENVIRONMENTAL PROTECTION
OFFICE OF OIL AND GAS

WELL TYPE : OIL ☐ GAS ☒ LIQUID ☐ WASTE ☐ IF "GAS" PRODUCTION ☒ STORAGE ☐ DEEP ☐ SHALLOW ☒

LOCATION :
ELEVATION 1101' WATERSHED TRIBUTARY OF SIMPSON BRANCH
DISTRICT LOUDON COUNTY KANAWHA QUADRANGLE CHARLESTON WEST 7.5'

SURFACE OWNER THE COURTLAND COMPANY ACREAGE 59.80
ROYALTY OWNER THE COURTLAND COMPANY LEASE ACREAGE 5.350
PROPOSED WORK :
DRILL ☒ CONVERT ☐ DRILL DEEPER ☐ REDRILL ☐ FRACTURE OR STIMULATE ☒ PLUG OFF OLD FORMATION ☐ PERFORATE NEW FORMATION ☐ PLUG AND ABANDON ☐ CLEAN OUT AND REPLUG ☐ OTHER ☐
PHYSICAL CHANGE IN WELL (SPECIFY) TARGET FORMATION BIG INJUN ESTIMATED DEPTH 2500'

WELL OPERATOR BLAZER ENERGY CORPORATION DESIGNATED AGENT RICHARD SMELTZER
ADDRESS P.O. BOX 2347 CHARLESTON, WV 25328 ADDRESS P.O. BOX 2347 CHARLESTON, WV 25328

COUNTY NAME PERMIT

19 18

Office of Oil and Gas
WV Dept. of Environmental Protection

Received

1) Date: August 15, 2013
2) Operator's Well Number
215391 (Courtland #18)
3) API Well No.: 47 039 - 05303
State County Permit

STATE OF WEST VIRGINIA - BUREAU OF ENVIRONMENT
DIVISION OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL & GAS
NOTICE AND APPLICATION TO PLUG AND ABANDON WELL

4) Surface Owner(s) to be served:	5) (a) Coal Operator:
(a) Name <u>The Courtland Company</u> ✓	Name <u>None</u>
Address <u>114 Monongalia Street</u>	Address _____
<u>Charleston, WV 25302</u>	_____
(b) Name <u>Kanawha State Forest</u> ✓	(b) Coal Owner(s) with Declaration
Address <u>7500 Kanawha State Forest Drive</u>	Name <u>The Courtland Company</u> ✓
<u>Charleston, WV 25314</u>	<u>114 Monongalia Street</u>
_____	Address <u>Charleston, WV 25302</u>
(c) Name _____	Name _____
Address _____	Address _____
_____	_____
6) Inspector <u>Terry Urban</u> ✓	(c) Coal Lessee with Declaration
Address <u>P.O. Box 1207</u>	Name <u>None</u>
<u>Clendenin, WV 25045</u>	Address _____
Telephone <u>304-549-5915</u>	_____
_____	_____

TO THE PERSONS NAMED ABOVE:

You should have received this Form and the following documents:

- (1) The application to Plug and Abandon a Well on Form WW-4B, which sets out the parties involved in the work and describes the well its and the plugging work order; and
- (2) The plat (surveyor's map) showing the well location on Form WW-6.

The reason you received these documents is that you have rights regarding the application which are summarized in the instructions on the reverses side. However, you are not required to take any action at all.

Take notice that under Chapter 22-6 of the West Virginia Code, the undersigned well operator proposes to file or has filed this Notice and Application and accompanying documents for a permit to plug and abandon a well with the Chief of the Office of Oil and Gas, West Virginia Division of Environmental Protection, with respect to the well at the location described on the attached Application and depicted on the attached Form WW-6. Copies of this Notice, the Application, and the plat have been mailed by registered or certified mail or delivered by hand to the person(s) named above (or by publication in certain circumstances) on or before the day of mailing or delivery to the Chief.

Well Operator:
By: _____
Its: _____
Address: _____
Telephone: _____

EQT Production Company
Victoria J. Roark
Permitting Supervisor
PO Box 280
Bridgeport, WV 26330
(304) 848-0076

Subscribed and sworn before me this

15 day of Aug, 2013

Notary Public

My Commission Expires:

8-24-20

The Office of Oil & Gas processes your personal information, such as name, address and phone number, as part of our regulatory duties. Your personal information may be disclosed to other State agencies or third parties in the normal course of business or as needed to comply with statutory or regulatory requirements, including Freedom of Information Act requests. Our office will appropriately secure your personal information. If you have any questions about our use of your personal information, please contact DEP's Chief Privacy Officer at depprivacyofficer@wv.gov.

AUG 19 2013

3905303 P

WW-9
Revised 2/03

Page ____ of ____
2) Operator's Well Number
215391 (Courtland #18)
3) API Well No.: 47 039 - 05303

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL & GAS
CONSTRUCTION AND RECLAMATION PLAN AND SITE REGISTRATION APPLICATION FORM
GENERAL PERMIT FOR OIL AND GAS PIT WASTE DISCHARGE

Operator Name: EQT PRODUCTION COMPANY OP ID: _____
Watershed: Davis Creek of the Great Kanawha River Quadrangle: Charleston West 7.5'
Elevation: 1101' County: Kanawha District: Loudon

Description of anticipated Pit Waste: Formation Fluids

Do you anticipate using more than 5,000 bbls of water to complete the proposed well work? Yes___ No X
Will synthetic liner be used in the pit? Yes Is so, what ml.? 30 ml

Proposed Disposal Method for Treated Pit Wastes:

X Land Application
____ Underground Injection - UIC Permit Number _____
____ Reuse (at API Number) _____
____ Offsite Disposal Permit #. _____
____ Other: Explain _____

Drilling medium anticipated for this well? Air, freshwater, oil based, etc. _____
If oil based, what type? Synthetic, petroleum, etc. _____

Additives to be used? _____

Will closed loop system be used? _____

Drill Cuttings disposal method? Leave in pit, landfill, remove offsite, etc. _____

If left in pit and plan to solidify what medium will be used? Cement, Lime, sawdust _____

Landfill or offsite name/permit number? _____

I certify that I understand and agree to the terms and conditions of the GENERAL WATER POLLUTION PERMIT issued on August 1, 2005, by the Office of Oil and Gas of the West Virginia Division of Environmental Protection. I understand that the provisions of the permit are enforceable by law. Violations of any terms or condition of the general permit and/or other applicable law or regulation can lead to enforcement action.

I certify under penalty of law that I have personally examined and am familiar with the information submitted on this application form and all attachments thereto and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine or imprisonment.

Company Official Signature 

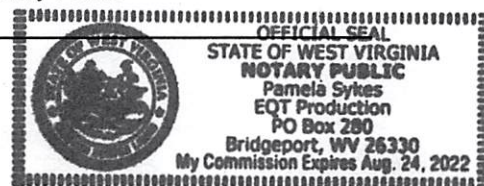
Company Official (Typed or Printed) Victoria Roark

Company Official Title Permitting Supervisor-WV

Subscribed and sworn before me this 15 day of Aug, 2013 of Oil and Gas
WV Dept. of Environmental Protection


 Notary Public


My Commission Expires 8-24-22

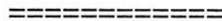


OPERATOR'S WELL NO.:
215391 (Courtland #18)

LEGEND

Property Boundary 

Diversion 

Road 


Spring 

Wet Spot 

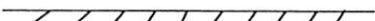
Planned Fence 

Drain Pipe with size in inches 

Water Way 

Existing Fence 

Stream 

Cross Drain 

Open Ditch 

Artificial Filter Strip 

Rock 


North 

Building 

Water well 

Drill site 

Pit with Cut Walls 

Pit with Compacted Walls 

Area of Land Application of Pit Waste 

Proposed Revegetation Treatment: Acres Disturbed: 1± Prevegetation pH 5.8

Lime 3 Tons/acre or to correct to pH 6.5

Fertilizer (10-20-20) or equivalent 1/3 ton lbs/acre (500 lbs minimum)

Mulch 2 Tons/acre or hydroseed.

SEED MIXTURES

Area I

Seed Type	lbs/acre
KY-31	40
Alsike Clover	5
Annual Rye	15

Area II

Seed Type	lbs/acre
Orchard Grass	15
Alsike Clover	5

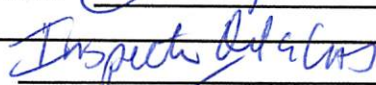
ATTACH:

Drawing(s) of road, location, pit and proposed area for land application.

Photocopies section of involved 7.5' topographic sheet.

Plan approved by: 

Comments: _____

Title:  Date: 8-19-13

Field Reviewed? Yes No

Received

AUG 20 2013

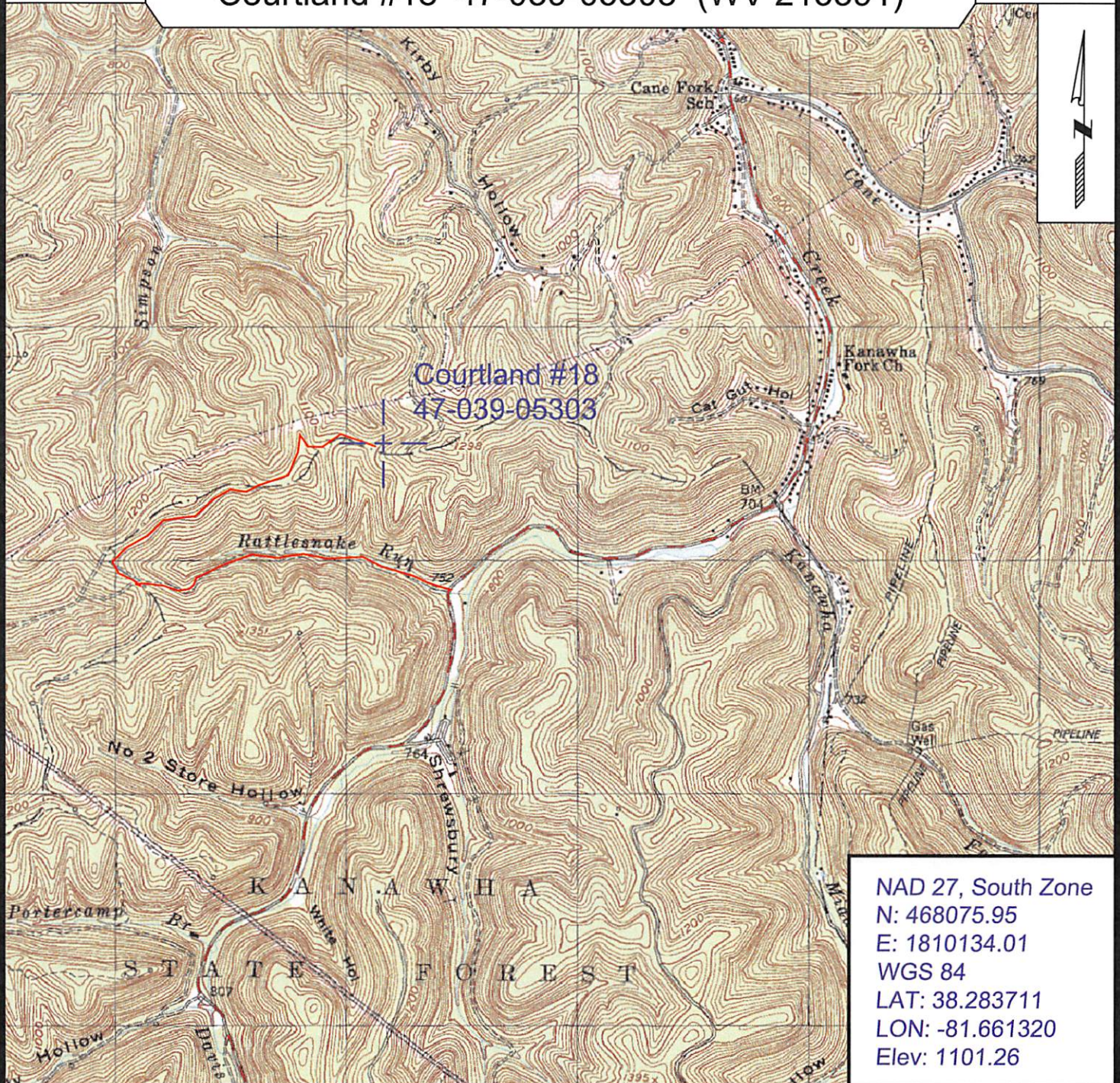
Office of Oil and Gas
 WV Dept. of Environmental Protection

3905303 P

Topo Quad: Charleston West 7.5'Scale: 1" = 2000'County: KanawhaDate: June 7, 2013District: LoudonProject No: 52-14-00-07

Courtland #18 47-039-05303 (WV 215391)

Topo



NAD 27, South Zone
 N: 468075.95
 E: 1810134.01
 WGS 84
 LAT: 38.283711
 LON: -81.661320
 Elev: 1101.26



SURVEYING AND MAPPING SERVICES PERFORMED BY:

ALLEGHENY SURVEYS, INC.

1-800-482-8606
 P.O. BOX 438
 BIRCH RIVER, WV 26610
 PH: (304) 649-8606
 FAX: (304) 649-8608

PREPARED FOR:

EQT Production Company

P.O. Box 280
 Bridgeport, WV 26330

Received

AUG 19 2013

WW-7
8-30-06



West Virginia Department of Environmental Protection
Office of Oil and Gas
WELL LOCATION FORM: GPS

API: 47-039-05303 WELL NO.: WV 215391 (Courtland #18)

FARM NAME: Courtland

RESPONSIBLE PARTY NAME: EQT Production Company

COUNTY: Kanawha DISTRICT: Loudon

QUADRANGLE: Charleston West 7.5'

SURFACE OWNER: The Courtland Company

ROYALTY OWNER: The Courtland Company, et al

UTM GPS NORTHING: 4237501

UTM GPS EASTING: 442162 GPS ELEVATION: 335 m (1101 ft)

The Responsible Party named above has chosen to submit GPS coordinates in lieu of preparing a new well location plat for a plugging permit or assigned API number on the above well. The Office of Oil and Gas will not accept GPS coordinates that do not meet the following requirements:

1. Datum: NAD 1983, Zone: 17 North, Coordinate Units: meters, Altitude: height above mean sea level (MSL) – meters.

2. Accuracy to Datum – 3.05 meters

3. Data Collection Method:

Survey grade GPS : Post Processed Differential

Real-Time Differential

Mapping Grade GPS X: Post Processed Differential X

Real-Time Differential

4. Letter size copy of the topography map showing the well location.

I the undersigned, hereby certify this data is correct to the best of my knowledge and belief and shows all the information required by law and the regulations issued and prescribed by the Office of Oil and Gas.

Signature

Date

Title

Received

AUG 19 2008